

REMARKS

By the present amendment, Claims 30, 32, 33, 38-41, 43, 45, 47, 48, 57 and 58 have been amended, and Claims 31, 42, 46 and 56 have been canceled. Claims 30, 32-41, 43-45, 47-55, 57 and 58 remain pending in the present application. Claims 30 and 45 are independent claims.

Applicant appreciates the courtesies extended to Applicant and Applicant's representative during the telephonic interview held June 30, 2005. The present response summarizes the substance of the interview. At the interview Applicant's representative discussed a proposed amendment with Examiner Tam T. Phan and Primary Examiner Marc D. Thompson. Proposed amended independent Claims 30 and 45 recited, respectively, an Internet search service system and method including a search service provider (SSP) level search subsystem and an in-site level search subsystem. The SSP level search subsystem was located on an SSP site. The SSP level search subsystem used web units as indexing objects and search results. Each web unit was an information entity with web unit index and categorization data for at least one web page of a web site. Each web unit was a self-contained and distinguishable sub entity of the web site. Each web page of each web unit was related to and integrated in the associated web unit according to a predetermined categorization criteria. The SSP level search subsystem included self-submission means for submitting web unit index and categorization data for a predetermined web unit; data organizer means for indexing and sorting web unit index and categorization data obtained by the self-submission means; and search service means

for obtaining web unit search results based on queries, narrowing down the obtained web unit search results according to selected narrow down variables, and providing personalized service. The in-site level search subsystem was located in the web site. The in-site level search subsystem included means for conveying feedback of users to web site owners; a web page authoring tool to simplify metadata implementation in web page writing; and an in-site search tool kit. The SSP level search subsystem was communicatively linked to the in-site level search subsystem.

Applicant's representative presented arguments that Tripp et al. (U.S. Patent No. US 6,516,337 B1), Smith (U.S. Patent No. US 6,772,139 B1), or any combination thereof, provide no motivation whatsoever to modify the teachings thereof to provide the two-level Internet search service system and method set forth in the associated proposed claims.

The Examiner suggested further amending proposed independent Claims 30 and 45 to more clearly more particularly define Applicant's claimed invention in view of the prior art of Tripp et al. and/or Smith. A formal agreement as to the patentability of the claims was withheld by the Examiner pending a thorough review of the arguments and proposed amendment presented at the interview, a thorough review of this amendment, and a further update search.

Claims 30-58 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tripp et al. in view of Smith. The cancellation of Claims 31, 42, 46

and 56 renders this rejection moot with respect to these particular claims. Applicant respectfully traverses this rejection.

Applicant has amended Claims 30, 32, 33, 38-41, 43, 45, 47, 48, 57 and 58 to more particularly define Applicant's claimed invention in view of the prior art of record. Applicant respectfully submits that the amendments to the claims are fully supported by the original disclosure, and introduce no new matter therewith.

Amended independent Claim 30 recites a two-level Internet search service system that includes an SSP level search subsystem and an in-site level search subsystem. The SSP level search subsystem is located on an SSP server. The SSP level search subsystem uses web units as indexing objects and search results at an SSP level search. Each web unit is an information entity with web unit index and categorization data for at least one web page of a web site, and each web unit being a self-contained and distinguishable sub entity of the web site. Each web page of each web unit is related to and integrated in the associated web unit according to a predetermined categorization criteria. The SSP level search subsystem includes self-submission means for submitting web unit index and categorization data for a predetermined web unit; data organizer means for indexing and sorting web unit index and categorization data obtained by said self-submission means; and search service means for obtaining web unit search results based on queries, narrowing down the obtained web unit search results according to selected narrow down variables, and providing personalized service. The in-site level search subsystem provides a web site level search. The in-site level search subsystem includes design aid means for conveying feedback of searchers and

providing designing and testing tools to web site owners to improve web site structure and navigation. The in-site level search subsystem includes a web page authoring tool to create web pages for the web site with content specific metadata for the web site. The web page authoring tool simplifying metadata implementation in web page writing/creation using the in-site level search subsystem. The in-site level search subsystem includes an in-site search tool kit that conducts an in-site search in the web site. The in-site search tool kit is located on a server different from the SSP server. The SSP level search subsystem is communicatively linked to the in-site search tool kit within the in-site level search subsystem.

Amended independent Claim 45 recites a two-level Internet search service method. The method provides an SSP level search subsystem located on an SSP server. The SSP level search subsystem uses web units as indexing objects and search results at an SSP level search. Each web unit is an information entity with web unit index and categorization data for at least one web page of a web site, and each web unit is a self-contained and distinguishable sub entity of the web site each web page of each web unit being related to and integrated in the associated web unit according to a predetermined categorization criteria. Web unit index and categorization data is self-submitted for a predetermined web unit using the SSP level search subsystem. The web unit index and categorization data obtained by the previous submitting step is indexed and sorted within the SSP level search subsystem. The method obtains web unit search results based on queries using the SSP level search subsystem. The method narrows down the obtained web unit search results

according to selected narrow down variables using the SSP level search subsystem. The method provides personalized search service from the SSP level search subsystem. The method provides an in-site level search subsystem for providing a web site level search. The method provides a design aid for conveying feedback of searchers and providing designing and testing tools to web site owners for improving web site structure and navigation using the in-site level search subsystem. The method provides a web page authoring tool to create web pages for the web site with content specific metadata for the web site, the web page authoring tool simplifying metadata implementation in web page writing/creation using the in-site level search subsystem. The method provides an in-site search tool kit for conducting an in-site search from the in-site level search subsystem. The in-site search tool kit is located on a server different from the SSP server. The SSP level search subsystem is communicatively linked to the in-site search tool kit within the in-site level search subsystem.

Applicant respectfully submits that each occurrence of means plus function language in the claims is considered to invoke interpretation based on 35 U.S.C. § 112, sixth paragraph. In Claim 30, the "self-submission means for submitting web unit index and categorization data for a predetermined web unit" is described on pages 19, line 19, to page 22, line 17 and shown in Figs. 3 and 4 of the present application. The "data organizer means for indexing and sorting web unit index and categorization data obtained by the self-submission means" is described on page 22, line 9 to page 24, line 9 and shown in Figs. 3 and 4 of the present application. The "search service means for

obtaining web unit search results based on queries, narrowing down obtained web unit search results according to selected narrow down variables, and providing personalized service" is described on page 24, line 10, to page 26, line 26 and shown in Figs. 5 and 6 of the present application. The "design aid means for conveying feedback of searchers and providing designing and testing tools to web site owners to improve web site structure and navigation" is described on page 28, line 16 to page 29, line 6 and Fig. 7 of the present application.

The claimed Internet search service system and method provides two levels of search systems for searchers to find information on the Internet and World Wide Web. Conventional search service systems are SSP centered search models, where all searches are conducted and stopped at an SSP server. There are some web sites that provide in-site search. But the two are not linked and do not work together. The claimed two-level Internet search service system and/or method uses web units as indexing object and search results at the SSP level to serve the purpose of finding relevant web destinations for searchers. They utilize in-site search means to help searchers find exact information at web site levels. They provide tools to connect two level searches and personalizes search.

At the SSP level, the purpose is to find relevant web destinations in the form of web units. Webmasters/site owners of web sites can submit web unit metadata (index) and select category locations (multi-directory) for web units of their web site. Self-submission can be done, but is not limited to, the use of downloadable submission

software from the SSP server. The downloadable submission software has functions to monitor changes in remote web sites and to remind webmasters to update their submission data at the SSP server. The SSP detects the submission(s) and sorts the data, and then puts them into a database on the SSP server. When users type a query in the search box, the SSP search engine brings the matching web units to users. When users want to further narrow down the initial result, the SSP program provides narrow down variables and based on user's selection generates a reduced search result list. When users click on the link of a search result, the users will leave the SSP server site and go to a web unit entry page on the remote web site.

The entry page provides the user with the ability to easily navigate through the web pages associated with the web unit, by indicating how many pages or slides are in the web unit, where the user is located within the web unit, etc. Users can save their visited web unit into a personal directory. The personal directory can be updated due to changes in either category structure in the SSP site or web units in remote web sites. The SSP can use software to analyze user's search pattern and create user profiles. The user profile can be used to suggest web units to users or other search improvement tips. A personal search agent can be set up to help users conduct further searches at the in-site level. A designated web unit can be used in the SSP server to let users post an unsolved search query. The users can provide feedback on web unit ranking and help to detect errors in web unit data.

At the server for the in-site level, the purpose is to find exact information locations (web pages) within the web site or web unit. The SSP provides help on improving web site navigation structure and user feedback. A remote web site server can install an authoring tool and in-site search tool kit from the SSP. The authoring tool is used to create web pages using content specific metadata for the web site associated with the server, the authoring tool facilitating the implementation of metadata (new web page language) in web page coding easier. The search tool kit includes a web robot that understands the metadata in web page coding and can generate indexes for all the pages in the remote web site. The in-site index database is created by an in-side web robot. A search program (search engine) can conduct searches in the in-site index database. Therefore, the in-site search is limited to the site wide scope. The SSP level search query can be sent to the in-site search engine via the communication linking method configured in the system (e.g., a personal search agent). The in-site search can be initiated either by the personal search agent or by a user. The agent can be used to carry search query(s) from the SSP level to the in-site search engine. The agent can conduct searches on all the web units from resulting lists at the SSP level. It can save a user a lot of time on finding exact information at all the web units that match queries at the SSP level. If a remote web site doesn't have in-site search tools from the SSP, a search agent can become a web robot to index the web pages in the web site.

HTML is basically a presentation language for human beings to understand. Therefore HTML code itself isn't very helpful to define a web unit. RDF, which was

developed by W3C at the time the invention was made, will be more powerful to define relationship between different parts of a web site. When RDF and XML are not widely implemented, human judgment must be used to define a web unit.

In most cases it is very intuitive to find out different functional components in a web site. How to define a web unit is based on its functionality, the amount of contents in it, the web site structure, and its targeted users. The web unit is also a flexible entity for indexing and cataloging purposes. If a web site is small enough, it can be treated as a web unit. For example, a web unit can be a web site with only several pages describing a small business. A single web page that contains self-contained content in it can also be a web unit. For example, a research paper posted by a scientist.

Tripp et al. describes a search engine that utilizes a bottom-up approach to index the content of a network instead of relying on a top-down approach as used by conventional search engines. Tripp et al. is a worldwide search system using a bottom-up indexing approach. The brochures used by Tripp et al. must be stored in the file directory of the remote site for determining the relevancy of the information in the brochure. In Tripp et al.'s invention, the metadata is assembled in web brochures, which are then submitted to the central search server. In the claimed Internet search service system and/or method, the authoring tool is for web unit builders and or webmasters to create metadata for the in-site search means. At the SSP level search, web unit builders and/or webmasters use self-submission to create indices and categorization information for web units. At the in-site search level, they use an authoring tool to write or rewrite their web

pages, so that the in-site search tool kit can use the metadata and other information to create in-site search database. Both the functions and usage environment for the claimed authoring tool are not same as described in Tripp et al.

Smith describes a database server that contains pointers to useful information, such as the World Wide Web. Users of the server may have hypertext links added automatically into documents they submit. Users may additionally contribute to the link database, thereby extending it, and may add additional qualifying information pertaining to the links.

Neither one of Tripp et al. or Smith teach or reasonably suggest a search system that has a two-level architecture. They each describe a central search service system or an SSP search system. Tripp et al. fails to teach or reasonably suggest an in-site level search subsystem and describes a system that "utilizes a bottom-up approach", i.e. "instead of using a central site including spidering software to recursively search all linked web pages and generate an index of the Internet, independent distributed components are located at each web host that report meta data about objects at the web host to the central server" (see Tripp et al., Fig. 2, col. 5, line 9 and lines 30-35).

Smith fails to teach or reasonably suggest an in-site level search subsystem and describes "a link installation service which automatically installs hyperlinks within information submitted to the service by hypertext authors" (see Smith, col. 3 lines 49-52). The link database is a separate service external to a web site or web sites. Smith fails to teach or reasonably suggest anything that builds a search service within a web site. The

Examiner incorrectly asserts that Smith discloses an in-site level search subsystem, relying on Figs. 1-7, col. 3, line 59 to col. 4, line 8, col. 5, line 58 to col. 6, line 16, and col. 11, lines 57-67 of Smith as providing such disclosure. Applicant respectfully submits that none of these portions of Smith teach or reasonably suggest an in-site level search subsystem. Smith describes a system facilitating link database building, organizing link database hierarchically, providing finely defined search, and authorizing users who can contribute to link database. As previously mentioned, Smith fails to teach or reasonably suggest an in-site search subsystem. The Smith system is external to a web site.

Tripp et al. fails to teach an SSP level search subsystem that includes the claimed self-submission means for submitting web unit index and categorization data for a predetermined web unit; data organizer means for indexing and sorting web unit index and categorization data obtained by said self-submission means; and search service means for obtaining web unit search results based on queries, narrowing down obtained web unit search results according to selected narrow down variables, and providing personalized service.

In the Tripp et al. system there are plurality of computers with at least one as a catalog site and the others as source sites (see Tripp et al., col. 5, lines 49-54). The Tripp et al. catalog site can be treated as an SSP level search service system. But the Tripp et al. disclosure nowhere teaches or reasonably suggests web unit self-submission, multi-directory categorization, indexing and sorting submitted data, narrowing down the

initial search result, and personalized search service (see Tripp et al., Figs. 2, 3, 9 and 45, col. 8, line 60 to col. 10, line 23, col. 11, line 35 to col. 13, line 34, col. 25, line 12 to col. 27, line 61, and col. 50, line 30 to col. 51, line 57).

The Examiner incorrectly asserts that Tripp et al. discloses the first two components mentioned above. Tripp et al. describes in col. 14, lines 12-25 and col. 15, lines 49-61 how a brochure 206 works in a source site, which is not an SSP level search service system. Tripp et al. also states that the "directory structure of the host and web site are used to determine the relevance of the information in the brochure". Here the directory structure means a file structure system every computer uses to store the data, which is not a multi-directory category nor is it a data organizer at an SSP level search subsystem. Tripp et al. describes in col. 27, lines 45-61 how a catalog site can store the object references instead of copying each object and how object authors can decide what to be referenced (indexed). This system does not have multi-directory categorization and data organization means.

Smith fails to teach or reasonably suggest a search service means for obtaining web unit search results based on queries, narrowing down obtained web unit search results according to selected narrow down variables, and providing personalized service. Smith describes a system that can finely define a search query (see Smith, Fig. 3, col. 11, lines 58-67), but it is not the narrowing down process set forth in the claimed two-level search system. In the claimed two-level search system, the initial keyword search result can be further narrowed down based on more user input by selecting narrow down

variables that generated from web unit metadata (see specification, Fig. 5, page 24, lines 10-19). A personalized search service mean contains personal directory at the SSP level system and a personal search agent that conducts search at personal directory or conveys the search command from the SSP level to the in-site level. Smith nowhere teaches or reasonably suggests this feature.

The Examiner incorrectly asserts that Smith teaches the third component at the SSP level search system by relying on col. 1, line 54 to col. 2, line 11. Smith describes how an Internet directory site can provide browsing service to let searcher go from broader scope to a narrower scope, which have nothing to do with narrowing down initial keyword search result or personalized search service. Smith also describes in col. 4, lines 5-8 how a searcher can conduct a search using a link database system's "component fields", i.e. narrow scope in a directory system, and refine the search by FIRST selecting the "More search options" (see Smith, Fig. 3, col. 11, lines 58-67). But all these search features have nothing to do with narrowing down the initial keyword search result or personalized search service. Therefore, all Smith mentions is using directory browsing to narrow the search scope and refine the search before entering a query. In the claimed two-level search system, the search can be done using either directory browsing or keyword query. The claimed invention uses keyword query and narrowing down AFTER the initial result is obtained. The initial keyword search result can be further narrowed down based on more user input by selecting narrow down variables that generated from web unit index. A personalized search service means contains personal directory at the

SSP level system and a personal search agent that conducts search at personal directory or conveys the search command from the SSP level to in-site level.

Neither Tripp et al. and/or Smith teach or reasonably suggest an in-site level subsystem that includes design aid means for conveying feedback of searchers and providing designing and testing tools to web site owners to improve web site structure and navigation; a web page authoring tool to create web pages for the web site with content specific metadata for the web site, the web page authoring tool simplifying metadata implementation in web page writing/creation using the in-site level search subsystem; and an in-site search tool kit to conduct an in-site search in the web site, the in-site search tool kit being located on a server different from the SSP server.

The Examiner acknowledges that Tripp et al. does not expressly teach an in-site level search subsystem. As described above, Smith only teaches how to create a link database external to a web site and does not say anything on a search subsystem inside a web site. Tripp et al. describes in col. 17, lines 47-64 communications between a catalog site and a source site, which is not conveying users' (searchers') feedback to web site owners. Smith describes in col. 15, lines 1-16 a system conducting an 'authorization' process for a user (contributor), which is not conveying searchers' feedback to web site owners. Tripp et al. describes in col. 5, lines 30-65 how to create a brochure for objects in a source site. The metadata implementation in web page writing is about metadata standards mentioned in the prior art analysis (see specification, page 7, line 20 to page 8, line 3). The metadata becomes part of the web page code. The authoring tool helps the

web page creation that utilizes metadata standards, such as RDF. The metadata in the web page code is read by in-site search engine tool (see specification, page 12, lines 10-15 and page 28, lines 11-15). The brochure described by Tripp et al. is not a part of a web page; instead it is a separate part of an information entity that resides in a host server or a web site server.

In Figs. 3-7, col. 11, lines 58-67, col. 16, lines 13-23 of Smith, Smith does not teach anything about a search tool kit inside a web site. The claimed in-site search engine tool kit includes an in-site robot, database, and search engine (see application, page 29, lines 13-16. It will understand the metadata in the web page code, communicate with a personal search agent, and allow searchers to conduct a search within the web site (see application, page 28, lines 11-15, page 29, lines 17-25, and page 28, lines 12-15). Smith fails to teach or reasonably suggest the same/similar functions.

Tripp et al. and/or Smith fail to teach and/or reasonably suggest a two-level Internet search service system and/or method that provides an SSP level search subsystem located on an SSP server and provides an in-site level search subsystem, as set forth in Claims 30, 32-41, 43-45, 47-55, 57 and 58.

Applicant again points out that it is well known that all of the claimed limitations must be taught or suggested by the prior art, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings (see *In re Vaek*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Applicant respectfully submits that Tripp et al., Smith or any combination thereof, provides no motivation whatsoever to modify the teachings thereof to provide a two-level Internet search service system including an SSP level search subsystem located on an SSP server and an in-site level search subsystem for providing a web site level search, the SSP level search subsystem using web units as indexing objects and search results at an SSP level search, each web unit being an information entity with web unit index and categorization data for at least one web page of a web site, and each web unit being a self-contained and distinguishable sub entity of the web site, each web page of each web unit being related to and integrated in the associated web unit according to a predetermined categorization criteria; the SSP level search subsystem including self-submission means for submitting web unit index and categorization data for a predetermined web unit; data organizer means for indexing and sorting web unit index and categorization data obtained by said self-submission means; and search service means for obtaining web unit search results based on queries, narrowing down the obtained web unit search results according to selected narrow down variables, and providing personalized service; and an in-site level search subsystem for providing a web site level search, the in-site level search subsystem including design aid means for conveying feedback of searchers and providing designing and testing tools to web site owners to improve web site structure and navigation; a web page authoring tool to create web pages for the web site with content specific metadata for the web site, the web page authoring tool simplifying metadata implementation in web page writing/creation using

the in-site level search subsystem; and an in-site search tool kit to conduct an in-site search in the web site, the in-site search tool kit being located on a server different from the SSP server, wherein the SSP level search subsystem is communicatively linked to said in-site search tool kit within the in-site level search subsystem, as Claims 30, 32-41, 43 and 44 require.

Applicant also respectfully submits that Tripp et al., Smith, or any combination thereof, provides no motivation whatsoever to modify the teachings thereof to provide a two-level Internet search service method that provides an SSP level search subsystem located on an SSP server and provides an in-site level search subsystem, the SSP level search subsystem using web units as indexing objects and search results at an SSP level search, each web unit being an information entity with web unit index and categorization data for at least one web page of a web site, and each web unit being a self-contained and distinguishable sub entity of the web site each web page of each web unit being related to and integrated in the associated web unit according to a predetermined categorization criteria; self-submitting web unit index and categorization data for a predetermined web unit using the SSP level search subsystem; indexing and sorting web unit index and categorization data obtained by the previous submitting step within the SSP level search subsystem; obtaining web unit search results based on queries using the SSP level search subsystem; narrowing down the obtained web unit search results according to selected narrow down variables using the SSP level search subsystem; providing personalized search service from the SSP level search subsystem; providing an in-site level search

subsystem for providing a web site level search; providing a design aid for conveying feedback of searchers and providing designing and testing tools to web site owners for improving web site structure and navigation using the in-site level search subsystem; providing a web page authoring tool to create web pages for the web site with content specific metadata for the web site, the web page authoring tool simplifying metadata implementation in web page writing/creation using the in-site level search subsystem; and providing an in-site search tool kit for conducting an in-site search from the in-site level search subsystem, the in-site search tool kit being located on a server different from the SSP server; and communicatively linking the SSP level search subsystem to the in-site search tool kit within the in-site level search subsystem, as Claims 45, 47-55, 57 and 58 require.

Applicant respectfully requests withdrawal and reconsideration of the rejection of Claims 30-58 under 35 U.S.C. § 103(a) as being unpatentable over Tripp et al. in view of Smith.

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For the foregoing reasons, Applicant respectfully submits that the present application is in condition for allowance. If such is not the case, the Examiner is requested to kindly contact the undersigned in an effort to satisfactorily conclude the prosecution of this application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Richard C. Litman', with a stylized flourish at the end.

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